

WHAT IS CLAIMED IS:

1. A rotary electric machine mounted on a vehicle comprising:
 - a stator including a stator core and an armature coil that is wound around the stator core and has a coil end protruding from the stator core in an axial direction;
 - a rotor arranged opposite to the stator core;
 - a housing supporting the stator and the rotor; and
 - a stator coolant passage means provided on an outer peripheral surface of the stator core, the stator coolant passage means having a damping member and a stator coolant tube defining a stator coolant passage for flowing coolant therethrough.
2. The rotary electric machine as in claim 1, wherein the stator coolant passage means forms a flat tubular hollow within the damping member for defining the stator coolant passage.
3. The rotary electric machine as in claim 1, further comprising:
 - an additional coolant tube separately arranged from the stator coolant passage means,
 - wherein the coolant flows in the stator coolant tube prior to the additional coolant tube.
4. The rotary electric machine as in claim 3,
 - wherein a thermal conductive resin is provided between the coil end and the housing; and
 - wherein the additional coolant tube is disposed to contact with

the thermal conductive resin opposite to the coil end.

5. The rotary electric machine as in claim 3, further comprising:
a commutating device attached to an outer surface of the housing
in the axial direction,

wherein the additional coolant tube is disposed opposite to the
commutating device through the housing in the axial direction.

6. The rotary electric machine as in claim 3, further comprising:
a voltage regulator attached to an outer surface of the housing
in the axial direction,

wherein the additional coolant tube is disposed opposite to the
voltage regulator through the housing in the axial direction.

7. The rotary electric machine as in claim 1,

wherein the damping member is constructed of a pair of plate-like
damping members, and at least one of the plate-like damping members has
a groove on a surface thereof for defining the stator coolant passage.

8. The rotary electric machine as in claim 1,

wherein the damping member includes a pair of plates, at least one
of plates has a groove on a surface thereof for defining the stator coolant
passage by being bonded to each other.